ENGEO
Expect Excellence

Statement of Qualifications

Ports and Shipyards



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Company Overview

ENGEO is an award-winning, employee-owned U.S. corporation with more than 400 geotechnical, civil, and coastal engineers, engineering geologists, hydrologists, hydrogeologists, environmental scientists, construction quality-assurance representatives, and laboratory testing specialists. serving clients in the U.S. and abroad for over 50 years.

We are a trusted engineering partner with extensive experience supporting shipyard and port infrastructure projects throughout California and beyond. Our multidisciplinary service lines are specifically tailored to address the complex challenges unique to maritime environments. We understand the critical demands of waterfront facilities, including seismic resilience, shoreline protection, environmental compliance, and rigorous construction quality assurance.

By combining deep technical knowledge with practical experience, we deliver tailored, site-specific solutions that enable our clients to develop and sustain safe, efficient, and resilient shipyard and port infrastructure.

What We Do

- Geotechnical Engineering
- Environmental Engineering
- Engineering Geology
- Water Resources & Hydrology
- Coastal Engineering &Marine Geotechnics
- Construction-Phase Testing & Observation
- Special Inspection & Materials Testing
- Stormwater Management
- Geographic Information System (GIS)
- Entitlement & Permitting Support

Naval Base, San Diego, CA



Services and Capabilities

Geotechnical Expertise

Our geotechnical services play a critical role in the successful execution of shipyard and port projects. Our deep expertise in subsurface conditions, seismic hazards, and coastal geomorphology supports the development of infrastructure in complex marine environments.

We support clients with advanced analyses for foundations, quay walls, dry docks, wharves, and container yards, prioritizing performance, constructability, and cost efficiency. From slope stabilization to seismic retrofit of aging port structures, our geotechnical team provides the insights and solutions needed to design with confidence and build with precision.

Geotechnical services include:

- Pre-Exploration Geomorphology Evaluation
- Subsurface Characterization
- Fault Characterization
- Earthquake Engineering, Seismic Analysis and Retrofit
- Foundation Engineering
- Shoring Design Review
- Grading Design
- Slope Analysis and Stabilization
- Slope Instrumentation and Monitoring
- Earth Retention System Design
- Subgrade Stabilization
- Levee and Dam Design
- Pavement Analysis and Design
- Settlement Analysis
- Shoreline Engineering
- Building Code-Required Special Inspections of Foundations and Vertical Construction
- Construction Instrumentation and Monitoring
- Construction-Phase Testing and Observation
- Earthwork Testing and Observation

Environmental/Hazmat

Ports and shipyards face elevated environmental scrutiny due to historic industrial use, marine resource proximity, and sensitive regulatory thresholds. We provide comprehensive environmental services tailored to these high-stakes settings.

We support clients in meeting environmental obligations through targeted services such as Phase I/II assessments, remediation planning, groundwater monitoring, and hazardous materials management while keeping projects on track and aligned with long-term goals.

To stay current with policies and keep every project on schedule, we routinely provide contact and coordination with project- and region-specific regulatory agencies to comply with Federal and State guidelines. Many clients rely on us as an advocate in working with the Department of Toxics Substances Control (DTSC) and the Regional Water Quality Control Boards.

Environmental services include:

- Phase I and II Environmental Site Assessments
- Underground Storage Tank Consultation
- Groundwater Monitoring Well Installation and Sampling
- Soil, Groundwater, and Soil Gas Remediation
- Soil and Groundwater Characterization
- HAZMAT Assessments, Permitting, and Disposal Services
- Subsurface Characterization
- Health Risk Assessments
- Input for EIR/EIS/CEQA
- Hydrogeologic Characterization
- Preliminary Endangerment Assessments
- Naturally Occurring Asbestos (NOA) Dust Mitigation Plans (ADMP) and asbestos air monitoring
- Risk Assessment and Management

Coastal Engineering

As one of California's premier specialists in the evaluation and mitigation of adverse geotechnical conditions resulting from coastal processes, we provide services including site characterization, investigation, design, and construction observation for private, public, and military projects.

In addition to the geotechnical design and construction services for coastal projects, we uniquely provide specialized A&E services for coastal projects and prepare construction documents, specifications, construction estimates and regulatory permit applications.

Our coastal engineering services are specifically aligned with the evolving needs of port and shipyard projects in dynamic shoreline environments. We bring decades of experience mitigating coastal hazards such as erosion, wave loading, sea level rise, and storm surge.

Our team supports the design and construction of seawalls, revetments, breakwaters, and other protective systems, while also navigating the complex permitting landscape associated with coastal construction.

Over the years we have worked along the California coastline serving local communities and private property owners to evaluate coastal hazards and design appropriate stabilization solutions. We are proud of the successful working relationships that we have developed with many coastal communities, the California Coastal Commission, the State Lands Commission, the U.S. Army Corps of Engineers, and the Regional Water Quality Control Board.

Hydrology and Hydraulics

Our hydrology and hydraulics services address the management of surface water and flood risks critical to shipyards and ports.

We apply advanced hydrologic and hydraulic modeling, supported by Geographic Information System tools, to evaluate watershed flows, design drainage systems, and develop flood control strategies that protect infrastructure such as docks, cargo yards, and access roads.

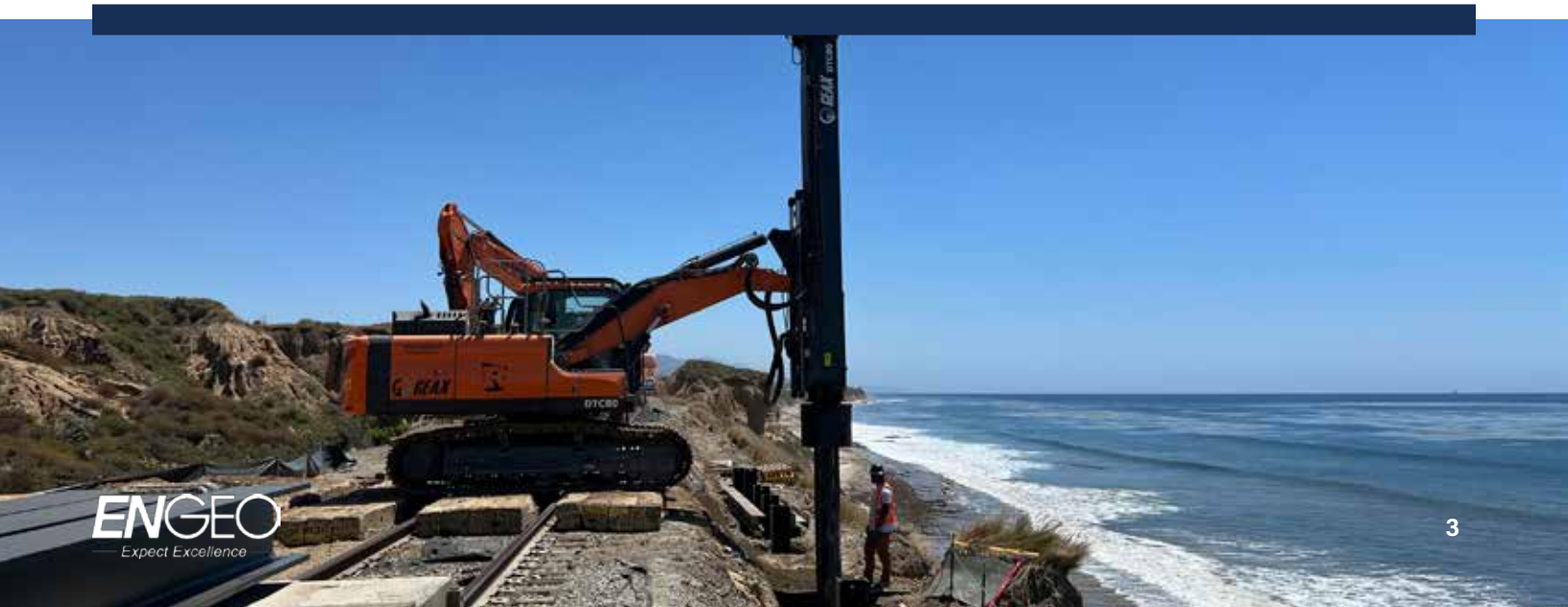
Our expertise extends to riparian restoration and wetland design when maritime projects interface with freshwater or estuarine environments. In these cases, we help ports and shipyards meet environmental regulations and enhance natural flood mitigation and water quality, supporting sustainable and compliant waterfront development.

Geographic Information Systems (GIS)

Our GIS services provide a strategic advantage for ports and shipyards seeking to modernize workflows and integrate multidisciplinary data.

Our web-based interactive project portals enable real-time tracking of environmental conditions, geotechnical data, construction progress, and regulatory constraints, bringing critical information into one centralized, accessible platform.

By consolidating data such as exploration results, historical imagery, hydrologic modeling, and water quality metrics, our GIS tools enhance collaboration, streamline permitting, and support informed decision-making across all phases of project development.



Testing, Observation, and Special Inspection

We provide earthwork testing and observation, special inspection, quality assurance, and construction monitoring services.

Our field representatives and inspectors provide the expertise and certifications required for high-stakes marine projects, covering everything from earthwork compaction and deep foundation observation to structural steel, welding, and reinforced concrete inspections. They are supported by a team of Construction Services Managers (CSM) with decades of experience overseeing complex construction projects.

Many of our staff hold multiple certifications across key technical areas, including nuclear gauge operation. Our personnel are qualified as special inspectors, laboratory technicians, and field-testing professionals, with certifications in one or more of the following areas:

- International Code Council (ICC)
- American Concrete Institute (ACI)
- American Welding Society (AWS)
- American Society for Testing and Materials (ASTM)
- American Council of Independent Laboratories (ACIL)
- American National Standards Institute (ANSI)
- American Standard of Non-Destructive Testing (ASNT)
- American Association of State Highway & Transportation Officials (AASHTO)
- California Department of Transportation (Caltrans)
- Nevada Alliance for Quality Transportation Construction (NAQTC)

In-House Laboratory Testing

Our seven accredited in-house laboratories deliver fast, reliable testing services that meet the complex demands of port and shipyard construction. We routinely test soil, concrete, asphalt, and aggregates for heavy-duty applications, confirming that materials align with stringent design and durability standards.

This in-house capability enhances responsiveness and quality control, helping keep complex construction efforts on track. We are inspected and accredited through the following:

- U.S. Army Corps of Engineers (USACE)
- California Department of Transportation (Caltrans)
- Cement and Concrete Reference Laboratory (CCRL)
- American Association of State Highway and Transportation Officials (AASHTO)
- Division of State Architects (LEA 92 and 334)





Port Experience

Port of San Francisco Waterfront Resiliency Program, San Francisco, CA

We worked on various facets of Port of San Francisco's (POSF's) important and transformational Waterfront Resiliency Program to address the dual risk of seismic hazards and sea level rise. While we have worked on various POSF assets over the last several decades, our in-depth involvement with the Waterfront Resiliency Program started circa 2015 with the Earthquake Vulnerability Study of the Northern Seawall and we continue to address the areas of highest earthquake and sea level rise risks along the Embarcadero waterfront through our on-going work on what is termed as the Embarcadero Early Projects.

Our work under the Waterfront Resiliency Program included an Earthquake Vulnerability Study of the Northern Seawall, where our geotechnical, geological, and seismic tasks were performed as a joint venture with GHD. We carried out preliminary geotechnical and seismic assessments of the Northern Waterfront Seawall as part of POSF's plan to strengthen the Seawall to maintain the viability of the Port's operations, increase protection of Port and City assets, and enhance life safety in the face of flooding and earthquake hazards.

We also performed planning, engineering, and environmental services for the seawall resiliency. As part of the CH2M Hill (now Jacobs) team, we performed acquisition of historical geotechnical and geologic data and carried out an extensive field exploration program comprising borings, sonic drilling, Cone Penetration Tests (CPTs), and field vane shear testing. We evaluated needs assessment and supported the alternatives analysis through preliminary engineering of several Embarcadero Early Projects.

Port of Oakland Berths 20 Through 24 Improvements, Oakland, CA

We provided geotechnical and construction support services for the fast-tracked reconstruction of entrance and exit gateways at Berths 20–24, including pavement replacement, utility infrastructure upgrades, and construction of reinforced concrete and structural steel facilities. Our scope included reviewing third-party pavement designs, conducting geotechnical exploration and testing, and delivering value-engineered pavement alternatives that enabled construction during a compressed fall-to-winter schedule.

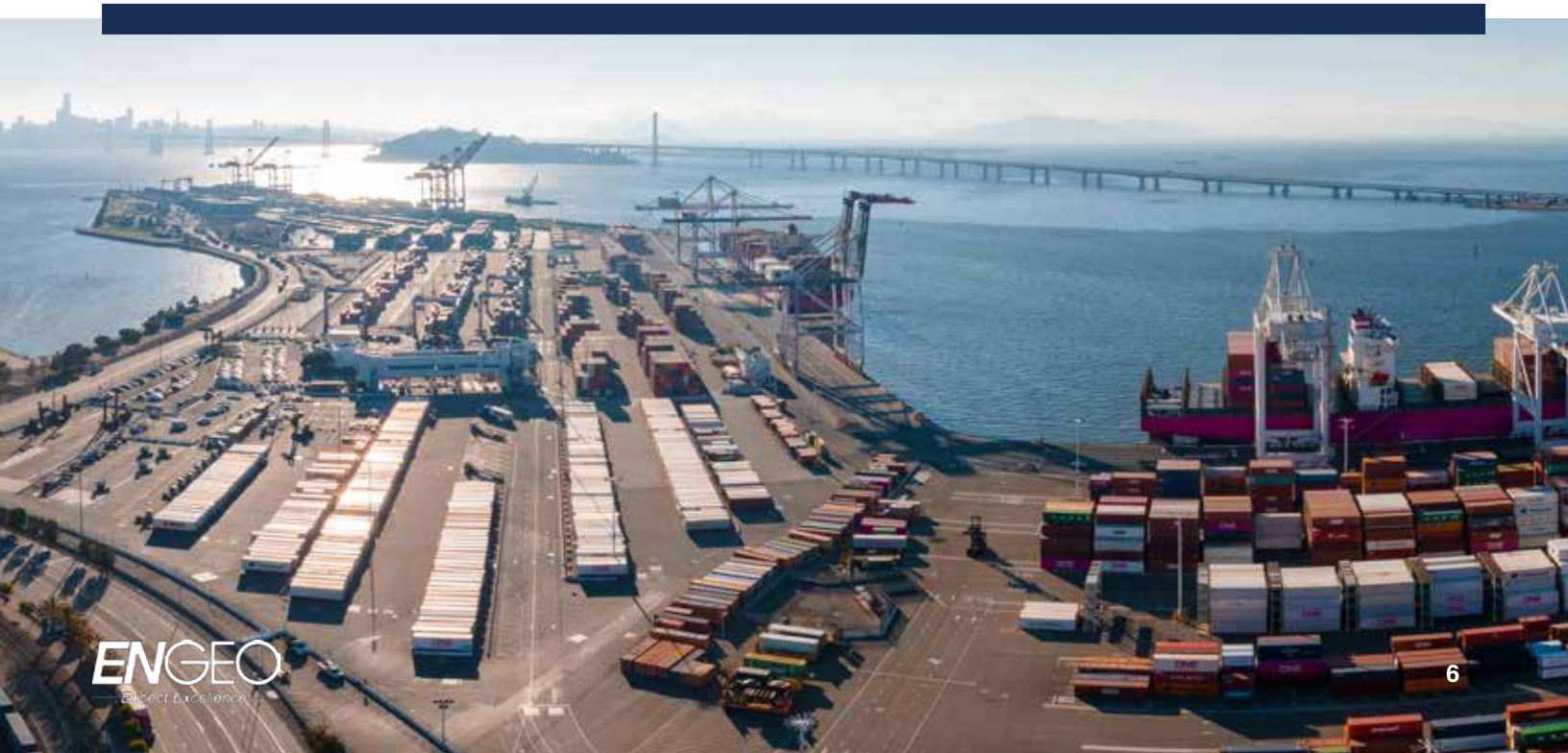
To mitigate weather-related delays, we recommended in-place grinding of existing asphalt and cement stabilization of subgrade materials, reducing import/export volumes and allowing uninterrupted work during rain events. GPS was used to develop "as-built" drawings of abandoned and new utilities. We also provided special inspections and materials testing for eight weigh-scale bays, security booths, sign bridges, and other critical facilities.

With a completion deadline of less than two months after the project start date, our team worked double shifts and remained on-call 24/7. Close coordination with the contractor, construction manager, stabilization subcontractor, and Ports America allowed the project to stay on schedule despite severe time and weather constraints.

Additional Port Projects

- Port of Oakland Sea Level Rise Vulnerability Assessment, Oakland, CA
- Port of San Diego Imperial Beach Pier Enhancement, Imperial Beach, CA
- Port of Long Beach World Oil Terminal Tank Installation Project, Port of Long Beach, CA
- Port of Redwood City Ferry Terminal, Redwood City, CA
- Port of Stockton Primafuel Biodiesel Production Facility, Stockton, CA
- Terminal One, Point Richmond, Richmond, CA
- International Matex Tank Terminals Marine Oil Terminal, Richmond, CA
- Plains All American Pipeline Marine Oil Terminal, Richmond, CA
- Shell/Equilon Marine Oil Terminal, Martinez, CA
- BP/ARCO Marine Oil Terminal, Richmond, CA

Port of Oakland, Oakland, CA





Shipyard Experience

Dry Dock No. 6, Puget Sound Navy Shipyard Bremerton, WA

Dry Dock No. 6 at the Puget Sound Navy Shipyard is the largest dry dock on the West Coast and the only one that can service aircraft carriers. It was constructed in the early 1960's, and portions are underlain by loose material that is subject to both liquefaction settlement and static settlement, which has caused cracking of the 8-foot drainage tunnel adjacent to the dry dock. The ground improvement for the project involved angled compaction grouting around the tunnel, consisting of 156 points up to 105 feet deep.

Geotechnical instrumentation of the drainage tunnel was planned to ensure that the compaction grouting would not further damage the tunnel in the process. We oversaw the procurement, installation, and monitoring of the instrumentation, which included in-place inclinometers (IPIs), crack gauges, and shaped array accelerometers (SAAs). The instruments that were specified for the project were not suitable for the desired horizontal measurement of potential displacement, so we worked with the project team to get approval for substitute instruments that were both appropriate for the planned application and less expensive than those specified.

Dry Dock No. 5, Pearl Harbor Naval Shipyard, HI

We are providing geotechnical expertise to several construction challenges and contractor-designed elements as a sub-consultant to the Dragados/Hawaiian Dredging/Orion joint venture under a $2.8 billion NAVFAC contract. This project forms part of the U.S. Navy's broader Shipyard Infrastructure Optimization Program (SIOP). The new Dry Dock No. 5 (DD-5) at Pearl Harbor Naval Shipyard (PHNSY) will replace Dry Dock 3. DD-5 is designed for modern naval requirements, offering greater depth and length to accommodate Virginia class submarines and larger surface vessels — a significant upgrade over Dry Dock No. 3, which is too shallow and narrow for the Navy's next generation fast attack submarines.

Key construction features of DD-5 include deep pile foundations, heavily reinforced concrete walls and floor, and advanced dewatering and pumping systems for efficient vessel servicing. Designed to withstand seismic activity, DD-5 incorporates earthquake-resistant structures and materials, while its corrosion protection and high-strength concrete ensure a 150-year design life. The project also includes integrated upgrades to utility systems, electrical infrastructure, and waterfront facilities as part of the Navy's SIOP. Upon construction, DD-5 will augment Pearl Harbor's long-term role in the U.S. Navy's Pacific Fleet maintenance.

Charlie Dock Extension, Saipan

The Charlie Dock Extension Project at the Port of Saipan is led by the Commonwealth Ports Authority to enhance maritime resilience and expand berthing capacity for commercial and recreational vessels. The project proposes a 700-foot extension of the existing dock, with structural options under consideration including an interlocking cellular sheet pile caisson, a combi-wall sheet pile bulkhead, and a pipe pile supported wharf. These alternatives are being evaluated for their ability to withstand seismic activity and marine conditions while supporting future dredging operations to accommodate larger vessels.

ENGEO is providing comprehensive geotechnical services throughout the project lifecycle. This includes subsurface exploration and field logging, liquefaction and lateral spreading analyses, and the development of axial and lateral pile design capacities.

ENGEO has also contributed to the evaluation of structural alternatives by assessing geotechnical feasibility and constructability.

Fulton Shipyard, Antioch, CA

The Fulton Shipyard project is a large-scale environmental remediation effort aimed at addressing contamination and improving ecological health at a 13-acre site in Antioch, California.

The project faced several hurdles, including contamination from heavy metals, petroleum hydrocarbons, polynuclear aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs). Multiple rounds of revisions and regulatory approvals from the DTSC added complexity to the process.

We played a key role in preparing critical documentation, including the Remedial Action Workplan (RAW), Treatability Study Work Plan with bench-scale pilot testing, and multiple technical addendums. These efforts supported the goal of remediating contaminated soil while prioritizing environmental and community health. We provided a targeted and strategic approach by developing sampling protocols, data collection plans, and health and safety guidelines.

Additional Shipyard Projects

- Continental Maritime of San Diego Bulkhead Improvements, San Diego, CA
- General Dynamics NASSCO Berth 2, San Diego, CA



General Dynamics NASSCO, San Diego, CA



Maritime Infrastructure Project Experience

Naval Base Point Loma Piers 5000, 5002, And 5003, Submarine Base, San Diego, CA

We conducted a geotechnical investigation to support seismic evaluations and recommend repairs or upgrades for identified deficiencies at three piers on the Submarine Base. Our work included a review of prior reports to assess potential impacts from the Fort Rosecrans Landslide on Pier 5003. The two-phase field program included four 120-foot soil borings and nine cone penetration tests (CPTs) near the pier abutments. We developed a detailed subsurface model and engineering parameters for seismic analysis. Site-specific response spectra were evaluated for OLE (50% in 50 years), CLE (10% in 50 years), and MCE (2% in 50 years) earthquake scenarios.

Naval Base San Diego Pier 8 Replacement, San Diego, CA

Located north of the Paleta Creek Channel, the Pier 8 Replacement project redeveloped critical Navy waterfront infrastructure. We provided geotechnical services to support the design and construction of the new facility. Our scope included reviewing existing geotechnical data and regional geology, followed by a focused field investigation: seven CPTs (six through deck drains, one landside), two offshore borings from the pier, and seismic ReMi surveys to develop shear-wave velocity profiles. Laboratory testing was performed to evaluate soil strength, compressibility, and corrosivity. We assessed seismic and geologic hazards including liquefaction, ground shaking, settlement, slope instability, and corrosive soils. Our recommendations supported foundation design and seismic resilience for this mission-critical Navy asset.

Berth Lima Conversion Project, Naval Base Coronado, CA

The Berth Lima Conversion Project at Naval Base Coronado involved a range of improvements, including the installation of new fender piles, guardhouses, a security building, guard towers, upgraded pavement, security fencing, and utilities. We conducted a geotechnical investigation that provided critical data for seismic design and site stability. Our team conducted field and laboratory investigations to assess site conditions, including fill soils, bay sediments, and the Bay Point Formation. In the second phase, we specifically focused on probing bay floor sediments at the toe of the wharf. We evaluated geologic hazards, such as ground shaking, liquefaction, and lateral spreading, to inform remediation strategies.

Naval Base San Diego MCON P-326 Replacement Pier, San Diego, CA

To modernize berthing facilities, the Navy constructed a new 457-meter-long, 37-meter-wide concrete pier to replace aging Piers 10 and 11. The pier supports crane operations and lies along the National City approach channel, about 2.7 km from the station's northern boundary. Post-construction dredging on both sides of the pier will reach a depth of -11.3 meters MLLW. We performed a comprehensive geotechnical investigation for the pier construction, dredging, and onshore improvements, including utility tie-ins, quaywall repairs, and a new concrete hardstand for tank loading. Our scope included 30 borings (15 from a spud barge, 12 through existing pier moonwells, and 3 landside), and a fault-trace geophysical survey. Geotechnical design support covered two-level seismic analysis and recommendations for large-displacement concrete piles in dense Bay Point Formation soils.

P-519 X-Ray Wharf Improvements (Berth 2), Naval Base, Guam

The overall wharf improvements include renovation and modernization of the south berth at X Ray Wharf, Berth 2, to provide berthing and utilities for T-AKE class supply vessels. Part A of the project includes installation of a new vertical sheet pile bulkhead system in front of and along the existing bulkhead and other wharf facilities. Part B of the project includes landside components including a new electrical substation constructed on a deep foundation system, new high mast lighting along the wharf, and other new small electrical equipment pads supported on shallow foundations. Part B also includes structural fill and a new wharf deck to support loads from trucks, forklifts, and a mobile crane, including its outriggers. Challenges for the design of the project include the presence of shallow groundwater, very high seismic loads, liquefication, compressible soil, and very high moveable vertical loads. Additional challenges included limited field exploration techniques due to lack of on-island availability. We are currently providing geotechnical design and support services, geotechnical quality control (GTQC), and is serving as Special Inspector of Record (SIOR). Our services also include density and acceptance testing of compacted fill, concrete strength testing, and strength testing of Cement Deep Soil Mixing (CDSM).

RM 14-1423 Mike and November Wharves, Guam

The project includes replacement of the steel sheet pile bulkhead, soil improvements, replacement of the mooring system, restoration of the heavy weather mooring system, fender system restoration, replacement of the existing electrical substation, replacement of wharf utilities (potable water, bilge oily water, sewer, steam, drainage, electrical, and telecommunications), construction of a communications building, construction of wharf lighting, pavement, and other appurtenances. We are serving as the construction geotechnical quality control (GTQC) specialist and contractor's geotechnical consultant..

RM 14-1420 Lima Wharf Repair, Naval Base, Guam

The RM 14-1420 Repair Lima Wharf project includes rehabilitation and reconstruction of the existing Lima Wharf bulkhead wall, stabilization of liquefiable soils behind the wall, and construction of a new substation and BOWTs facility at Naval Base, Guam. We have provided geotechnical quality control specialist services during construction for the H2O-Guam JV team. Scope of services includes offshore bulkhead predrilling and sheet pile driving, and onshore anchor pile predrilling and pile driving.

Additional Maritime Infrastructure Projects

- Naval Base Point Loma Pier 302 Replacement, Point Loma, CA
- Harbor Island West Marina, San Diego, CA
- Naval Ordinance Test Station (NOTS) Pier, San Clemente Island, CA

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